REMARKS

This Amendment is in response to the Office Action dated October 1, 2003. Reconsideration is requested.

Claims 1-40 are now present in the application. Claims 1, 12, 31 and 40 are independent. Claim 28, formerly independent, has been amended to dependent form.

Claim Rejections - 35 USC §112

Claims 1-29 have been rejected as allegedly being indefinite.

With regard to claim 1, the Examiner asks what is meant by "carbon-linked." The applicant considers that the term is readily understood as referring to the mono-valent linkage between R and the ether oxygen atom to which it is attached. However, in the interest of advancing prosecution, so that the linkage is more explicitly recited. A comparable recitation has also been made for R^1.

In other amendments to claim 1, not related to the §112 rejections, the definition of R^1 has also been amended to delete "H", and the α-β unsaturated monomer component has been recited using comprising language. Additionally, the specification, page 5, line 29 indicates that embodiments employing liquid rubbers may be prepared, as to which tensile and elongation properties for elastomeric polymer b) are not applicable and so have been deleted from claim.

Regarding claim 6, this claim has been amended to recite only members of the original list which have an R^1 group within the amended definition of the antecedent claim 1. The Markush language has been adjusted to conform to a proper form. The Examiner's objections to original claim 6 have been taken into account in drafting new claim 36 which recites all of the original members of claim 6.

Regarding claim 8, the missing (iii) has been corrected in this claim and in the corresponding specification. Also the recitation in (ii) of "another polymerizable monomer" might be read as a monomer other than "an alkyl ester of acrylic acid" or other than "an alkoxy ester of acrylic acid" as the case may be. The recitation (iii) is provided to make sure copolymers between different alkyl esters of acrylic ester are included. Likewise the recitation (iv) has been provided to make sure copolymers between different alkoxy esters of acrylic ester are included. To make this more explicit, the word "multiple" has been inserted in the recitations (iii) and (iv).

Regarding claim 11, the Examiner notes that ethylene-propylene is not a monomer. The claim has been amended to recite an ethylene propylene-polymer. A comparable amendment has been made on page 5 of the specification.

Regarding claim 14, the Examiner's proposal for lines 4-5 has been followed. In line 10, Applicant has changed "iron arene salt complex" to "iron arene complex salt" to conform to the specification at page 7, lines 5-6, but otherwise disagrees that the term is indefinite. The iron arene complex salts are a well known is class of cationic photoinitiators.

No objection has been raised as to claim 15, but the undersigned has noticed that a comma was missing after "alkoxy" in line 3 and this has now been corrected.

Regarding claim 16, the applicant does not agree that the word and on line 3 should be deleted. The "and" in line 3 serves to associate the various ..onium terms with the word "salts". The second and collectivizes the individual salts with "mixtures thereof" to complete the Markush group. Therefore no change has been made in this claim.

Regarding claim 18, the Examiner is correct. A comma has been inserted between "polymers" and :inorganic."

Regarding claims 24 and 25, the applicant does not agree that IR and UV are indefinite but has spelled out the terms "infrared" and "ultraviolet" to advance prosecution.

Claim Rejections - 35 USC §102/103

A. JP 2000-264911

Claims 1-7, 9, 10, 13, and 17-29 are rejected under 35 U.S.C. §102as allegedly being anticipated by JP 2000-264911 (J '911). The rejection is traversed.

A machine translation of J '911 is enclosed, together with the JAPIO English language abstract. The translation is prepared by the Japanese Patent office website and is quite poor. However, taken with the official abstract, the machine translation is seen to be better evidence of the contents of the original JP document than the abstract which the applicant previously submitted and upon which the Examiner is understood to be relying.

i) Claims 1-7, 9, 10, 13, 17-29 and New Claim 30

J '911 appears to be directed specifically to the incorporation of (methano) cyclohexene functionalized compounds into vinyl ether systems. The vinyl ether component is defined

exclusively in terms of literal vinyl compounds, *i.e.* compounds as in applicant's formula (I) where R^1 is H. The document does not pertain to any other type of unsaturated ether composition. Independent claim 1 has been amended to recite an α-β-unsaturated ether monomer component which includes a compound in which R^1 an n-valent organic group linked by a carbon atom to the carbon atom to which R1 is attached. That is, a compound in which R^1 is not H and so is not a vinyl ether. J' 911 makes no suggestion of a composition which includes such a monomer. Accordingly the rejection is overcome by this amendment. Therefore, reconsideration and withdrawal of the rejection of claims 1-7, 9, 10, 13, and 17-29 on J '911 are respectfully requested.

New claim 30 is not anticipated by, and thus patentable over, J '911 at least for the reasons given for claim 1.

ii) Claims 31-39

As already noted, J '911 appears directed specifically to the incorporation of (methano) cyclohexene functionalized compounds into vinyl ether systems. It is not specifically directed to incorporation of polybutadiene polymers in vinyl ether systems or even to incorporation of elastomer polymers in vinyl ether systems. There is an example of a (methano) cyclohexene functionalized polybutadiene, (resin 1, paragraph [0034]), but that example employs a ***liquid*** polybutadiene and so cannot have the tensile strength or elongation properties recited in claim 31. Therefore, at least for this reason, the invention as recited in independent claim 31 clearly is not anticipated.

Moreover, to the extent that the machine translation can be understood, J '911 does not suggest employing a solid polybutadiene resin in a vinyl ether composition, much less one which has the tensile strength and elongation properties specified in independent claim 31. At least for this reason, the invention as recited in independent claim 31 is not obvious from J '911.

Claim 40

Claim 40 recites an unsaturated ether composition which includes a millable polyurethane rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. J '911 does not teach or suggest a vinyl ether composition which employs a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. At least for this reason, claim 40 is seen to be novel and non-obvious over this document.

B. JP 07-228842

Claims 1-6, 9, 10, 13, and 17-29 are rejected under 35 U.S.C. §102 as allegedly being anticipated by JP 07-228842 (J '842). Reconsideration is requested.

A machine translation of J '842 is also enclosed, together with the JAPIO English language abstract. The translation is prepared by the Japanese Patent office website and is quite poor. However, taken with the official abstract, the machine translation is seen to be better evidence of the contents of the original JP document than the abstract which the applicant previously submitted and upon which the Examiner is understood to be relying.

i) Claims 1-6, 9, 10, 13, 17-29 and New Claim 30

J '842 appears to be directed to compositions which employ a vinyl ether compound, a linear polyester elastomer having a molecular weight in the range of 5,000-50,000, and a cationic photoinitiator. The vinyl ether component is defined exclusively in terms of literal vinyl compounds, *i.e.* compounds as in applicant's formula (I) where R^1 is H. Independent claims 1 and 28 have been amended to recite that the unsaturated monomer component includes a compound in which R^1 an n-valent organic group linked by a carbon atom to the carbon atom to which R^1 is attached. That is, a compound in which R^1 is not H and so is not a vinyl ether. J' 842 makes no suggestion of a composition which includes such a monomer. Accordingly the rejection is seen to be overcome by this amendment. Reconsideration and withdrawal of the rejection of claims 1-7, 9, 10, 13, and 17-29 based on J '842 are respectfully requested.

New claim 30 is not anticipated by, and thus patentable over, J '842 at least for the reasons given for claim 1.

ii) Claims 31-39

As already noted, J'842 pertains specifically to compositions employing linear polyester elastomers. Such polyester elastomers are not within the recitation of original claim 7 and original claim 7 was nor rejected on the basis of this document. The recitation of original claim 7 has been incorporated into claim 31. At least for this reason, claims 31-39 are seen to be novel and non-obvious over J '842.

iii) Claim 40

Claim 40 recites an unsaturated ether composition which includes a millable polyurethane

rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. J '842 does not teach or suggest a vinyl ether composition which employs a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. At least for this reason, claim 40 is novel and non-obvious over J '842.

C. J '911 or J '842 in view of Decker article

Claims 14-16 have been rejected as obvious from J '911 or J '842 taken in view of the Decker article " High-Speed Curing by Laser Irradiation." In this rejection J '911 and J '842 are relied upon for the antecedent composition, with Decker introduced only to show triarylsulfonium or diaryliodonium salts. This rejection is overcome by the same amendment which renders claim 1 patentable over J '911 and J '842. Reconsideration and withdrawal of the rejection of claims 14-16 on J '911 or J '842 in view of Decker article are respectfully requested.

D. Nakasuga et al

Claims 1-9, 11, 13-19 and 21-29 are rejected under 35 USC §102(e) on Nakasuga et al, US 6,376,070. Reconsideration is requested.

i) Claims 1-9, 11, 13-19, 21-29 and New Claim 30

Nakasuga et al describe curable pressure sensitive adhesive formulations of a high molecular weight polymer, an epoxy compound and a photoinitiator. A vinyl ether compound may also be included as an additive in an amount of not more than 1/3 of the total composition weight.[1]

There is nothing in Nakasuga et al which pertains to the use of any other type of unsaturated ether compound, much less ones having the formula (I) as now recited in claim 1(R^1 is a carbon-linked organo group). Moreover there is nothing in this document which can be seen to suggest using such a compound in a composition as described. Therefore reconsideration and withdrawal of the rejection of claims 1-9, 11, 13-19 and 21-29 on Nakasuga et al are respectfully requested.

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1 The polymer is 1-10000 parts per part epoxy (col. 8, lines 5-6), *i.e.*, a minimum of 1:1 polymer/epoxy. The epoxy is used at 30-70 parts relative to 1-30 parts vinyl ether -col. 8, lines 27-31. That is a maximum of 1:1 epoxy/vinyl ether. Therefore the maximum ratio of vinyl ether relative to polymer and epoxy is 1:1:1 or 1/3 . The photoinitiator is not included in this calculation. Therefore the maximum amount of vinyl ether is less than 1/3 of the

New claim 30 is seen to be patentable over Nakasuga et al at least for the reasons given for claim 1.

ii) Claims 31-39

The vinyl ether in Nakasuga et al is an optional component which can be employed to slow polymerization of the epoxy compound in early stages of irradiation by selectively polymerizing first so that tackiness remains adequate (col. 6, lines 4-22). As understood, the primary adhesive properties of the composition rely primarily on the combination of the epoxy and high polymer compounds. Consequently the motivation will be to keep the vinyl ether content down below the maximum allowable by the combination of the ranges provided by Nakasuga et al. As we have already shown, the maximum content of vinyl ether which might be argued to be permitted by the ranges indicated in this patent is not more than 1/3. There is nothing in this patent which would suggest or motivate inclusion of greater than 40% by weight vinyl ether.

Claim 31 recites an amount of unsaturated ether which is greater than 40% to about 98% by weight of the composition[2]. This recitation clearly distinguishes claim 31 from Nakasuga et al.

iii) Claim 40

Claim 40 recites an unsaturated ether composition which includes a millable polyurethane rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. Nakasuga et al does not teach or suggest a vinyl ether composition which employs a millable polyurethane rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. At least for this reason, claim 40 is seen to be novel and non-obvious over Nakasuga et al.

E. Heinz et al

Claims 1-7, 11, 13, 17 and 20-22 have been rejected under 35 U.S.C. §103 as allegedly being obvious over Heinz et al US 4,320,188). Reconsideration is requested.

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total composition weight.

[2] This recitation, as well as the 45% recitation found in new claim 35 are supported by the range recited in original claim 5 under the reasoning of *In Re Wertheim,* 191 USPQ 90 (CCPA 1976).

Claims 1-7, 11, 13, 17, 20-22 and New Claim 30

Heinz et al describes curable elastomer compositions for preparing multilayer printing plates which include from 1-40 % , especially from 5 to 30% of an unsaturated monomer (col. 4, lines 61-62). The unsaturated monomer may be a (meth)acrylate monomer or a vinyl ether monomer (col. 4, line 63- col. 5 line 13). The compositions also include certain elastomeric block copolymers (ABC blocks) which are soluble in developer solutions and a conventional photoinitiator. The photoinitiators listed and/or exemplified are all radical photoinitiators. There is no mention of a cationic photoinitiator anywhere.

There is nothing in Heinz et al which pertains to the use of any other type of unsaturated ether compound, much less ones having the formula (I) as now recited in claim 1 where R^1 is a carbon-linked organo group. Moreover there is nothing in this document which can be seen to suggest using a compound of formula (I) in the type of printing composition as described by Heinz et al. Therefore reconsideration and withdrawal of the obviousness rejection of claims 1-7, 11, 13, 17 and 20-22 on Heinz et al are respectfully requested.

New claim 30 is patentable over Heinz et al at least for the reasons given for claim 1.

ii) Claims 31-39

In most of the examples of Heinz et al, the radiation curable block-copolymer is applied to a separate adhesive layer which has already been provided on a base film (col. 8, lines 48-52, col. 9, lines 26-29, 23-24, col. 10, lines 55-61 col. 12, lines 1-6, *see also* col. 6, line 51-col. 7, line 2). The compositions are cast from solvent solution. Cationic photoinitiators are not employed. In the one example where the radiation curable composition containing a block copolymer is described as adhesive (Example 4, the monomer is an acrylate/methacrylate mixture, not a vinyl ether; the monomers, taken collectively, are present in the dried composition in an amount of only about 12.3%; and a high amount (37%) of a tackifying resin is used. Consequently, a skilled person will not find patent to be a general teaching of an radiation curable adhesive composition employing a vinyl ether monomer.

Moreover, the applicant does not agree with the Examiner's contention that use of cationic photoinitiators would be obvious given the general description of "conventional photoinitiator systems." Heinz et al's layers have necessary properties for washing out uncured material after exposure and for binding to ink during the normal use contemplated by Heinz et al.

Absent more information, the ionic character of cationic photoinitiators might be considered likely to have an adverse effect on such properties.

Furthermore, there is no teaching in Heinz et al of a composition containing greater than 40% of any monomer and especially not one which employs α-β unsaturated ether monomer(s) in such amount.

At least for the reasons just given, Heinz et al is not seen to render obvious the subject matter of claims 31-39.

iii) Claim 40

Claim 40 recites an unsaturated ether composition which includes a millable polyurethane rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. Heinz et al does not teach or suggest a vinyl ether composition which employs a millable polyurethane rubber, a fluorinated rubber, an isoprene-acrylonitrile polymer or a chlorosulfonated polyethylene. At least for this reason, claim 40 is seen to be novel and non-obvious over Heinz et al.

Allowable Subject Matter

Claim 12 has been indicated to be allowable if rewritten to overcome the indefiniteness rejections applied to claim 1, and otherwise incorporate the recitations of claim 1. This has now been done.

Conclusion

In view of the foregoing amendments and remarks the application is now believed to be in condition for allowance. Early and favorable action thereon is requested.

Respectfully submitted,

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Enclosures: Machine translations of J '911 and J '842 with JPO abstracts

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